Amendments to the Claims

Please amend Claims 35, 38, 41, and 44. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Previously Presented) In a multi-point communications system having a receiver and transmitter disposed at a primary site for communication with a plurality of remote units disposed at respective secondary sites, an antenna comprising:

multiple receiving elements configured to receive communications signals over a carrier frequency from the plurality of remote units, at least two receiving elements configured to receive the communication signals on a same frequency band during any period of time, the receiving elements being partitioned into a plurality of groups disposed remotely from one another by at least a predetermined minimum group spacing sufficient to obtain spatial diversity, each group containing at least one receiving element, at least one group including multiple receiving elements located proximal to one another and no farther apart than a predetermined maximum receiving element spacing to facilitate spatial filtering.

2. (Previously Presented) The communication system of claim 1, wherein the predetermined maximum receiving element spacing is no more than one-half times a wavelength corresponding to the carrier frequency.

3. (Previously Presented) The communication system of claim 1, wherein the predetermined minimum group spacing is at least five times a wavelength corresponding to the carrier frequency.

4. (Previously Presented) The communication system of claim 1, wherein the multiple receiving elements constitute an adaptive antenna array and each group constitutes a sub-array.

5. (Previously Presented) The communication system of claim 1, further comprising means for electronically steering the multiple receiving elements.

6. (Previously Presented) The communication system of claim 1, wherein the multiple receiving elements constitute a switched beam antenna array.

7-28. (Cancelled)

29. (Previously Presented) A multi-point communications network comprising:

a receiver and transmitter disposed at a primary site;

a plurality of remote units disposed at respective secondary sites for communication with the receiver and transmitter at the primary site;

the primary site having an antenna including multiple receiving elements for configured to receive communications signals over a carrier frequency from the plurality of remote units, at least two receiving elements configured to receive the communication signals on a same frequency band during any period of time, the receiving elements being partitioned into a plurality of groups disposed remotely from one another by at least a predetermined minimum group spacing sufficient to obtain spatial diversity, each group containing at least one receiving element, at least one group including multiple receiving elements located proximal to one another and no farther apart than a predetermined maximum receiving element spacing to facilitate spatial filtering.

30. (Previously Presented) The network of claim 29, wherein the predetermined maximum receiving element spacing is no more than one-half times a wavelength corresponding to the carrier frequency.

31. (Previously Presented) The network of claim 29, wherein the predetermined minimum group spacing is at least five times a wavelength corresponding to the carrier frequency.

32. (Previously Presented) The network of claim 29, wherein the multiple receiving elements constitute an adaptive antenna array and each group constitutes a sub-array.

33. (Previously Presented) The network of claim 29, wherein ~~said~~ the antenna further comprises means for electronically steering the multiple receiving elements.

34. (Previously Presented) The network of claim 29, wherein the multiple receiving elements constitute a switched beam antenna array.

35. (Currently Amended) An adaptive antenna array architecture for communication, the architecture comprising:

a plurality of adaptive antenna arrays for signal reception, ~~wherein~~ the plurality of adaptive antenna arrays including a plurality of sub-arrays, each sub-array including at least two receiving elements, the receiving elements in the sub-arrays being <u>located</u> no farther apart than a predetermined maximum receiving element spacing to facilitate spatial filtering, wherein the sub-arrays being spaced to obtain spatial diversity;

an array fixation structure configured to position the plurality of adaptive antenna arrays;

an array support structure for positioning the array fixation structure at a desired elevation; and

a base station configured to control the adaptive antenna array architecture.

36.-37. (Cancelled)

38. (Currently Amended) A signal receiver for receiving communications signals, the receiver comprising:

an adaptive array configured to receive signals from remote units;

a plurality of demodulator units configured to process the signals;

a plurality of beamformers ~~for~~ configured to construct a desired signal response <u>pattern</u> as a function of direction of arrival data of the signals<u>, the desired signal response pattern providing a higher relative gain in one or more angular directions and minimizing co-</u>

channel interference in other angular directions; and

a spatial diversity combiner configured to remove interference from the signals.

39. (Previously Presented) The receiver of claim 38, further comprising a direction of arrival processor configured to calculate a direction of arrival for the signals.

40. (Previously Presented) The receiver of claim 38, further comprising an orthogonal frequency division multiple access unit configured to segment available bandwidth into a plurality of frequency bins for allocation.

41. (Currently Amended) A method for reducing signal interference, the method comprising:

assigning at least one widely spaced frequency bin to a user, each bin being in a neighborhood of bins belonging to other users;

spacing the at least one frequency bin belonging to the user to at least one sufficiently different frequency in a dominant direction of arrival of signals in each bin as a function of minimizing signal strength of active bins to reduce inter-bin interference; and

locating the at least one frequency bin with at least one frequency bin of other users such that directions of arrival for the users are distinctly separable.

42. (Cancelled)

43. (Previously Presented) A method for allocating communication bandwidth, the method comprising:

determining a first direction of signal arrival for a first remote user and a second direction of signal arrival for a second remote user;

assigning the first remote user to a first frequency bin; and

assigning the second remote user to a second frequency bin based at least in part on the directions of signal arrival such that directions of signal arrival for adjacent frequency bins differ.

44. (Currently Amended) A method for avoiding interference in communications signals, the method comprising:

partitioning available bandwidth into a plurality of frequency blocks, the frequency blocks including a plurality of bins;

assigning a user to a widely spaced bin in each of the frequency blocks, each bin being in a neighborhood of bins belonging to other users; and

distributing the bins within the frequency blocks as a function of power of the bins.